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*An account of some of the mineral productions in the State of New York, (accompanying specimens transmitted for the Cabinet of the American Academy of Arts and Sciences,) in a Letter from BENJAMIN DE WITT, M.D. Sec. N. Y. Soc. Agric. Arts and Manufact. F.A.A. F.H.S. &c. to ELIPHALET PEARSON, L.L.D. Corresponding Secretary of the Academy.*

DEAR SIR,

HAVING a convenient opportunity by the Rev. Mr. Kirkland to transmit to your Academy a sett of the transactions of our Society for the promotion of Agriculture, Arts and Manufactures, instituted in the State of New York, which I promised you ; I also send by the same hand some specimens of mineral substances from my collection, which the American Academy of Arts and Sciences will please to accept. I am fond of seeing collections of the subjects of Natural History, and therefore willing to contribute my mite towards them. Indeed such collections, when they become large, are not only highly interesting as objects of curiosity ; but also of great use in the study of those sciences, which have nature for their subject, such as Botany, Chemistry, Zoology, &c. They exhibit as it were in one view the natural history of a whole country, or of the whole world in proportion to their extent. They open to our eyes numerous pages in the book of nature, and allow us at once to read her beautiful and marvellous works. They present to us an elegant compendium of the creation, condensed in the small space of a room. If the many  
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intelligent

intelligent gentlemen, scattered all over our country, who possess a taste for such studies, were each to collect only a few of the curious objects that fall in their way, and transmit them to one luminous centre, such as that of your excellent Institution ; we should soon be in possession of a complete natural history of our country. Discoveries would be daily made, and the most important benefits result therefrom. The many plants and fossils which now perhaps are embosomed in the wilderness, or buried in the earth, would be brought to light, and applied to the most useful purposes of life. I should therefore wish to see our *American* academies of science, Philosophical societies and other literary institutions pay particular attention to this subject. I can promise you but a few specimens at present, as follows.

No. 1. exhibits a specimen of *iron ore*, procured from a mine near West Point, in the vicinity of Hudson's river. This ore is so rich that it will bear transporting in floops from there to Albany, and from thence a number of miles inland to a forge for the purpose of refining.

No. 2. *Iron ore* found in the township of Marcellus, county of Onondago. This mine is known but by a few individuals, and not yet worked.

No. 3. *Bog ore* of iron found also in the county of Onondago, at no great distance from the salt springs.

No. 4. *Bog ore* of iron, very rich, found near the Ballstown springs, and forged in large quantities.

No. 5. A specimen of a beautiful milk white *Gypsum*, or plaster of paris, of a carminated texture, and somewhat transparent, found in large quantities in the township of Camillus and county of Onondago.

No. 6. The same *Gypsum* calcined by a gentle heat and fallen to powder, resembling the finest flour in softness and whiteness.

No. 7. A transparent glassy specimen of the same kind of *Gypsum*, from the same place.

No. 8. A solid piece of *Gypsum* from the same place, and somewhat resembling the former, but exhibiting an appearance like camphor on the surface of its transverse fracture.

The body of Gypseous Chrystal, of which the foregoing are samples, lies about seven miles nearly west from the Salt Springs ; and about a quarter of a mile southward from where the main road to the westward crosses the stream that runs out of the *Ostisco lake*, here called the Nine mile Creek. In consequence of this situation, near the Ostisco lake and outlet, it is called the OSTISCO GYPSUM. From this place the waters are navigable with batteaux into the Onondago or Salt lake and Seneca river, affording a convenient transportation. The Gypsum is found against the banks of a gully, in which the waters that run through it in wet seasons have worn a pebbly channel. The bank declines but a few degrees from a perpendicular. About ten or fifteen feet from the bottom the Gypsum is seen like a rock of chrystal, which has been wholly covered with a few

few inches of mould ; and seems to have been evidently discovered by somebody climbing up the bank and flipping the loose ground from the solid surface of the Gypseous rock with his foot. A surface of perhaps a yard in diameter has only been uncovered, and presents an appearance which immediately gives you an idea that the body of the mountain is of the same substance. Although nobody has yet taken the pains of tracing it beyond the surface, which is mentioned as being exposed to view. This plaster of paris, or rather *Ostisco Gypsum*, existing to appearance in such large quantity and of such a superior quality, must in time become of great use to agriculture and the arts. I believe it to be much preferable to the best kinds found in Europe, and used for the finest works.

No. 9. A more impure piece of *Gypsum* found about eight miles west of the main body above described, near where the western road crosses the outlet of the Schanicateles lake.

No. 10. An adulterated specimen of *Gypseous earth*, lying between two strata of the impure stone in which it is embedded ; found in lot No. 35 of the Onondago reservation, about two or three miles east of the *Ostisco quarry*. It was discovered in digging a well six or eight feet below the surface of the ground. These minerals being found in so many places, and at the distance of two, three and eight miles from the principal body, shews that the country abounds with them, and affords a strong presumption that they exist in very large quarries.

No.

No. 11. Supposed to be an imperfect *Gypseous stone* of a blue colour, found in great quantities on the Cayuga lake. I have made no experiments on this ; but it emits a sulphureous smell when heated in the fire.

No. 12. Contains four varieties of *plaster of paris* from Nova Scotia, which, when compared with our's, will shew the difference between the two.

No. 13. A *calcareous petrefaction* formed in the stream of a spring of running water ; precipitated and concreted in large masses, among the moss.

No. 14. A specimen of the *calcareous concretion*, cemented round pebbles and various other stones, dug out of the bottom of the salt springs ; and found under the earth in large bodies, along the declivity in the vicinity of the springs. Of this nature I take to be the rocky bottom of all the salt springs of Onondago, produced probably by a precipitation of the lime from the water. (See my memoir on the salt springs and manufactories of Onondago. Agric. Transf. N. Y. Soc. No. III. p. 99.)

No. 15. A sample of the *mossy plant* growing in abundance in the bottom of the salt lake, which in shallow places may be seen almost covering the whole of it. It still retains the peculiar smell which seems to be imparted to it by the salt water. I suspect it to be of the nature of the plant kali, and perhaps the mineral alkali might be obtained from it.

No.

No. 16. A *red flaty stone* taken out of one of the salt springs.

No. 17. *Red stony fragments* of which the declivity from the high ground descending to the Salt Springs is composed. The earth also intermixed with this is of the same colour, resembling the red soil of New Jersey at Brunswick; perhaps the water oozing through this earth may give that property to the salt water by which it colours the wood and surfaces of stones as it issues from the springs, although itself appears clear and transparent.

No. 18. *Salt chrysalized* in small chrystals, procured from a pot of the salt spring water after it was boiled down.

No. 19. *Product of the salt water* by simple evaporation without separation. It has a reddish tinge, owing to the calcareous earth, which is of that colour when separated from the water in the act of boiling. The salt manufactured at these springs, so much resembles the common white blown salt (only a little coarser) that I think it unnecessary to send you a specimen of it.

No. 20. Appears to be a white soft *clay stone* found in great abundance in the township of Camillus, Onondago county. In one place it underlays the soil for a large space, covered about a foot or more with mould.

No. 21. The *same substance* reduced to powder, mixed into a paste with water and dried. It remains yet to be determined

ed to what useful purposes in the arts this may be appropriated.

No. 22. A *white fossil substance* found in large quantities at the little falls on the Mohawk river.

No. 23. A *yellow mineral substance* found on the east side of the Cayuga lake near the water oozing out of the rocks and concreting to the sides of them. Used by the Indians as an emetic, and for the healing of sores.

No. 24. A beautiful *hexangular rock crystal*, transparent as the purest water, and perfectly polished on its surfaces.

No. 25. A pure *sand stone* as white as milk, found in great abundance in a place between Poughkeepsie and New York. It is easily broken to pieces, and much of it spontaneously reduced to sand, which is principally used on the floors of houses in its vicinity.

No. 26. A curious *annular stone*, in the shape of a circular ring, formed singly in the centre of a bed of blue clay. I think it will puzzle the geologist to account for the manner of its formation.

No. 27. Contains *sixty four specimens* of as many varieties of stones, to be found on the shore of Lake Ontario. Their uncommon beauty and variety of colour, shape, texture and disposition first engaged my attention ; and I sometimes amused myself with making selections from them as I was walking along the water. The pebbles beat upon the shores by the surf,



surf, and worn in regular spherical shapes, are all a commixture of these varieties, and exhibit a singularly variegated appearance. An examination of this assemblage of specimens will perhaps afford you a complete idea of the mineralogy of that part of the country. To account for the intermixture of so many different kinds of stone, many of them essentially distinct from each other ; I first imagined that they might have been conveyed from different and distant parts of the lake by the motion and turbulence of the waters ; and this indeed seems to be partially the case. But when I came to inspect some parts of the banks I found all that variety interspersed in great numbers among the clay of which they were composed. This is especially true of that part of the shore on which the garrison of Oswego stands. It is here sixty or seventy feet high, almost perpendicular, consisting of clay, resting on a solid basis of rock, nearly level with the surface of the water, where it exhibits a shattered appearance. Now it is almost impossible to believe that so great a variety of stones should be naturally formed, in one place and of the same species of earth. They must therefore have been conveyed there by some extraordinary means. I am inclined to believe that this may have been effected by some mighty convulsion of nature, such as an earthquake or eruption ; and perhaps this vast lake may be considered as one of those great *fountains of deep* which were *broken up* when our earth was deluged with water, thereby producing that confusion and disorder in the composition of its surface, which evidently seems to exist.

One of the *banks* of the *Oswego river* about a mile from the lake is entirely composed of strata of *free stone*, which appear to be superior in texture and beauty to those found in New Jersey. These will furnish a cheap and elegant material for the stately buildings which we may anticipate in a few years to be erected in the *city of Oswego* lately founded under the auspices of our legislature.

*Albany, Sept. 2, 1799.*



*An account of the deleterious effects of Mephitic Air, or marsh miasmata, experienced by three men, July 27, 1797. In a well, on the Boston pier; in a letter to the Rev. JOSEPH WILLARD, president of the university in Cambridge, and vice president of the American Academy of Arts and Sciences. By Rev. JOHN LATHROP, D.D. A.A.S.*

THIS well, like that which was dug some years ago on Minot's T, a part of the same pier, commonly called, the Long Wharf, is wholly surrounded with salt water, against which it is secured with clay and strong boxes.

The workmen had advanced about 27 feet before they experienced any inconveniency from bad air.

The several strata, through which they passed for good water, were,